

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Re: Application of : Andre FEUGIER et al.  
Serial No. : 10/577,748  
Filed : June 18, 2007  
For : METHOD FOR PRODUCTION OF  
NUCLEAR FUEL PELLETS  
Attorney Docket No. : 569.1016  
Art Unit : 1747  
Examiner : Elizabeth Royston  
Confirmation No. : 2865

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Date July 15, 2011

**DECLARATION OF CATHERINE CALLENS UNDER 37 C.F.R. § 1.132**


I, Catherine CALLENS, being duly sworn, depose and say:

1. I am employed by AREVA NP since April 1983 and I am currently the Intellectual Property Manager for the Fuel Business Unit of AREVA NP; as such I'm in charge of the management of patent applications on behalf of AREVA NP and its subsidiaries of which Société Franco-Belge de Fabrication de Combustible FBFC, a French corporation.
2. From April 1997 to December 2002, I was in charge of the MOX product line and as such I was directly involved in the development of the process described in the above-referenced patent application, especially in the context of the manufacture of MOX fuel.
3. I am completely familiar with the contents of the above-referenced patent application, and believe myself to be one of skill in the art.

4. In my opinion, one of skill in the art, at the time of the invention would understand from reading the specification that there is no sieve step within the present invention. It would have been clear to one of skill in the art no sieve step occurs based on the disclosures in the specification including:
  - a. the problems with the prior art, the "main risk is the failure of the sieve at the granulator outlet." (Substitute Specification page 3, lines 14 to 26).
  - b. the conventional grinding techniques are "complex and give rise to some hazard, given that the wires of the sieves used may fail." (Substitute Specification page 4, line 31 to page 5, line 2).
  - c. the prior art processes are complex and "require many stages for conditioning the  $\text{UO}_2$  powder and for mixing it with additives." (Substitute Specification page 5, lines 14 to 16).
  - d. the objective of the present invention is to provide a process through which operations required to obtain a granular material can be simplified from the prior art. Furthermore, the specification teaches "go[ing] to a single compression and mixing operation." (Substitute Specification page 8, lines 25 to 30).
  - e. "the process according to the invention ... comprises only a single stage (or at most two stages if a lubrication stage by 'soft' mixture is taken into account) to pass from uranium oxide powder obtained by a uranium hexafluoride conversion process to a particulate material which can be shaped into raw pellets, instead of the seven stages in the case of the prior process." (Substitute Specification page 22, lines 22 to 27).
  - f. the seven stages in the case of the prior process being: sieving operation, homogenization, mixing with incorporation of additives, precompaction, granulation, spheroidization and then lubricant addition (Substitute Specification page 2, line 30 to page 3, line 12).
5. Through reading the specification which discloses the problems with the prior art, the objective of the present invention, examples of the present invention and teaches the simplification of the present invention in comparison to the prior art, it would have been well understood to one of skill in the art that "the particulate material is not sieved before shaping."
6. It would have been clear to one of skill in the art upon the reading of the specification that the grid disclosed in the specification is not a sieve and does not separate the particulate matter. The grid disclosed in the specification of the present invention is clearly used to retain the moving bodies in the vessel. (Substitute Specification page 14 lines 23 to 25).
7. One of skill in the art would have understood through reading the specification that "no binder is added." It would have been clear to one of skill in the art no binder is added in the present invention based on the following disclosures in the specification:

- a. the addition of additives and lubricants. (Substitute Specification page 7, line 21 to page 8, line 4). It would have been clear to one of skill in the art reading the specification that no binder was intended to be added, as the specification would have clearly taught such a step.
  - b. the objective of the present invention is to simplify the complex stages of the prior art.
  - c. Examples 1, 2 and 3, lubricants and pore-formers provided in the specification do teach not adding binder material. Based on the reading of the specification this would have been clear to one of skill in the art that the inventor possessed this limitation.
8. It is my opinion that one of skill in the art reading of each of the detailed and complete Examples would understand that no sieving or binders were used.
9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like if made are punishable by fine or imprisonment, or both, under 18 USC §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

July 15, 2011  
Date

  
Catherine Callens